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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/691,590

10/24/2003

Sunil Kochhar

88265-6820

2216

28765

7590

06/14/2006

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EXAMINER

WORLEY, CATHY KINGDON

ART UNIT

PAPER NUMBER

1638

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/691,590	Applicant(s) KOCHHAR ET AL.	
	Examiner Cathy K. Worley	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 12-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-11 and 19-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Objections

2. The objections to the specification for the use of trademarks and to claims 5 and 6 for awkward wording are withdrawn in light of their amendments.

Claim Rejections - 35 USC § 112

3. Claims 5-11 and 19-20 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement for the reasons of record stated in the Office Action mailed on Jan. 3, 2006. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Applicant's arguments have been fully considered but were found to be non-persuasive.

The Applicants argue that a nucleotide sequence encoding the claimed peptide can be expressed in a suitable cell by means well known in the art (see paragraph bridging pages 6-7 of the response received on March 27, 2006). The

Examiner agrees that the claimed peptide can be expressed recombinantly using standard techniques, but the Examiner does not agree that the claimed invention is enabled to be used to manufacture cocoa flavor without further, undue, experimentation.

The Applicant argues that there is adequate disclosure of transgenic cocoa beans that express the polypeptide or fragments thereof, and that cocoa plants that have been modified to contain a high number of copies of nucleotide sequences encoding the polypeptides of the present invention will inherently result in the production of a stronger cocoa flavor (see page 7 of the response, last two paragraphs). This is not persuasive, however, because the disclosure is speculative. Prophetic transgenic plants and prophetic results are discussed.

The Applicant argues that the peptides can be added to a fermentation mixture of cocoa beans, or alternatively could be present at a higher concentration in transgenic cocoa beans (see page 7 of the response, third paragraph). The Applicant further argues that the instant specification teaches the hydrolysis of the claimed polypeptide followed by the reaction with reducing sugars, but that the addition of amino acids is not essential. The Examiner agrees that the peptides can be added to a fermentation mixture, but does not agree that the Applicant has shown that the addition of this particular peptide can be used to manufacture cocoa flavor. Furthermore, the prior art teaches that free amino acids and reducing sugars are required in addition to the polypeptides, and that the ratio is important

(see Office Action of Jan. 3, 2006 and Roedel et al.); therefore further experimentation would be required to produce the desired cocoa flavor.

The Applicant argues that the source of the protein to generate the peptides is not important, instead the sequence is important (see page 8 of the response, third paragraph). This is not persuasive, however, because the prior art teaches that the source of the polypeptides is important (see Office Action of Jan. 3, 2006 and Roedel et al). It is possible that both the source AND the amino acid sequence are important for cocoa flavor. Because there is a high degree of unpredictability, and because there are many polypeptides in the mixture of peptides that result from fermentation of high-flavor cocoa beans, one of skill in the art would not know if this one particular peptide can be used to enhance cocoa flavor. It is possible that one of the other polypeptides in the mixture that is shown in Figure 1 is required for enhanced flavor. In addition, the Applicant's assertion that they have identified novel polypeptides having a specific sequence that can produce cocoa flavor irrespective of the source is speculative, and there are no data to show this statement is correct.

The Applicant's argue that optimization of the flavor by determining the appropriate amounts of reducing sugars and amino acids is well within the capacity of the person of ordinary skill in the art with simple trial and error experimentation (see page 8 of the response, fifth paragraph). The Examiner agrees that this part of the optimization would be routine. However, the Applicant has not shown that the

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particular peptide they have claimed will yield higher cocoa flavor. It is possible that the claimed peptide is not particularly flavorful, and other peptides generated by fermentation of cocoa beans are the ones that are responsible for the cocoa flavor. In the absence of taste-tests showing that the claimed polypeptides are responsible for enhancing cocoa flavor, and given the unpredictability as discussed in the previous Office Action, the requirement for enablement has not been met.

In summary, it is clear that one of skill in the art could make the claimed invention, however, it is not clear it would result in enhanced cocoa flavor, and there is no other use asserted. Therefore, one of skill in the art would not know how to use the claimed invention.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

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the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy K. Worley whose telephone number is (571) 272-8784. The examiner can normally be reached on M-F 8:30 - 5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CKW

June 1, 2006



ASHWIN D. MENTA, PH.D.
PRIMARY EXAMINER